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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,268	12/16/2004	Dominicus Martinus Wilhelmus Leenaerts	NL 020551	3559

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EXAMINER

CHEN, JUNPENG

ART UNIT PAPER NUMBER

2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/518,268

Applicant(s)

LEENAERTS ET AL.

Examiner

Junpeng Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to applicant's amendment filed on 12/01/2006.
Applicant cancels claims 2-3 and 8-9 by amendment. Claims 1 and 4-7 are pending.
This action is made FINAL.

Response to Arguments

2. Applicant's arguments filed 12/01/2006 have been fully considered but they are not persuasive.

Regarding Applicant's first argument, Applicant argues that the processing unit only controls the VCO but not the divider (DIV). However, as in paragraph [0038] of Bart Balam, the PS that adjusts the divider ration (N) is a *programming* signal. Since it is a *programming* signal, it has to come from a programming unit, and this programming unit would be a part of the inherently existing processing unit. Therefore, the processing unit is controlling the DIV as well.

In response to applicant's second argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., to change the division ratio autonomously) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Objection - Specification

4. The disclosure is objected to because of the following informalities:

a) On **page 6 line 23**, replace "that" with --than--.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Appropriate correction is required.

Objection - Drawing

5. The drawings are objected to because some figures have blocks that lack descriptive labels. For example, block 3 in figure 1 should be additionally labeled as: "controller". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Appropriate correction is required.

Objection - Claims

6. Claim 6 is objected to because of the following informalities:

- a.) On **line 6 of claim 6**, replace "that" with --than--.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by **Bart Balm, et al. (D.E. Patent No. 10056294 A1)**.

Consider **claim 1**, Bart Balm et al. clearly shows and discloses a tuning system for receiving (*receiver module, paragraph 0046*) a radio frequency input signal included in a frequency range the range having a plurality of non-overlapping bands, a maximum frequency and a minimum frequency, the tuning system comprising a voltage-controlled oscillator controlled by an analog signal and a first binary signal (*read as VCO is controlled by tuning signal UA and output of DR, Figure, paragraphs [0037] and [0042]*) and being characterized in that the analog signal is inputted to a window comparator

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(read as UA is inputted into window comparator (FK), Figure, paragraph [0042]), said comparator having a low threshold which is indicative for the minimum frequency and a high threshold which is indicative for the maximum frequency (read as the window comparator (FK) compares the tuning voltage (UA) from detector module (DE) to an upper limit (MAX) and to a lower limit (MIN). [The] limits are filed in the window comparator (FK), Figure, Paragraph [0042]), wherein the window comparator generates a signal that is inputted to a controller (read as the output of the window comparator (FK) is inputted into a inherently existing processing unit, which would comprises counter (CR), decoder (DR) and programming unit which generates programming signal (PS) to the frequency divider (DIV), Figure, paragraphs [0037-0038] and [0042], for generating the first binary signal to digitally control an output frequency of the voltage-controlled oscillator (read as the output of decoder (DR) is being used to control the VCO, Figure, paragraph [0042]) and wherein the controller further generates a second binary signal that is inputted to a frequency divider for determining a division factor of a periodical signal generated by the voltage-controlled oscillator (read as the programming signal (PS) from the inherently existing processing unit is being used to adjust the divider ratio (N) of the divided oscillator signal (OS), Figure, paragraph [0038]).

Consider **claim 4, as applied to claim 1 above**, Bart Balm et al. discloses the tuning system, wherein the controller further comprises a local memory for storing a binary representation of the frequency range and of each of the bands included in the frequency range *(read the counts of the counter (CR) for multiple stage are filed in a*

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non-volatile memory and this non-volatile memory could be in the processing unit above, paragraph [0045]).

Consider **claim 5, as applied to claim 1 above**, Bart Balm et al. discloses the tuning system, further comprising a phase-locked loop (*paragraph [0036]*), the phase-locked loop including a phase detector coupled to the frequency divider (*read as phase detector (PD) couples to frequency divider (DIV), Figure, paragraph [0039]*), the phase detector generating an error signal that is proportional to a phase difference between a phase of a reference periodical signal and a phase of a signal generated by the frequency divider (*read as reference signal (RS) by a reference oscillator (XO) and the output of the frequency divider (DIV) are inputted into the phase detector (PD) to generate the phase difference of them two, Figure, paragraph [0039]*), the error signal being inputted to a compound bloc comprising a charge pump coupled to a loop filter, the compound bloc generating the analog signal (*read as the output of the phase detector (PD) goes into charge pump (CD), which couples to loop filter LF, to generate tuning voltage (UA), Figure, paragraphs [0039]-[0040]*).

Consider **claim 7, as applied to claim 1 above**, Bart Balm et al. discloses the tuning system, wherein the voltage-controlled oscillator comprises a plurality of capacitors coupled respectively to a plurality of switches, a state of said switches being controlled by the first digital signal (*read as oscillator is with several partial capacitances switched in parallel, each of which can feature one switch respectively in series for a partial capacitance and the switches are connected to the decoding and actuating*

module in order to influence the oscillator frequency and thus tuning frequency range of the oscillator, paragraph [0019]).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bart Balm, et al. (D.E. Patent No. 10056294 A1)** in view of the **Morgan et al. (U.S. Patent No. 6,320,406 B1)**.

Consider **claim 6, as applied to claim 1 above**, Bart Balm et al. discloses the tuning system, wherein the window comparator generating a first signal having a binary value whenever the analog signal is bigger than the high threshold, generating a second signal having a second binary value whenever the analog signal is smaller than the low threshold *(read as if the tuning voltage (UA) exceeds the upper limit (MAX), then an up signal is prepared which causes the counter (CR) to increase its current count by 1. If the current tuning voltage (UA) falls below the lower limit (MIN), then a down signal is used to cause the counter (CR) to decrease its current count by 1, paragraph [0043])*.

However, Bart Balm et al. fails to specifically discloses that the window comparator comprising a first differential comparator and second differential comparator to generate first signal and second signal respectively,

In related art, Morgan et al. discloses a window comparator 51, which comprises a first differential comparator 510 and second differential comparator 511, Fig. 5, lines 45-65 of column 4.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings by Morgan et al. into the teachings of Bart Balm et al. for the purpose of using a window comparator having zero-crossing state.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junpeng Chen whose telephone number is (571) 270-

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1112. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Junpeng Chen
J.C./jc

January 23, 2007

EDAN ORGAD
PRIMARY PATENT EXAMINER

Edan Orgad 1/30/07